

REMARKS

This Amendment is responsive to the Office Action identified above, and is further responsive in any other manner indicated below.

PENDING CLAIMS

Claims 1-18 were pending in the application, under consideration and subject to examination at the time of the Office Action. Unrelated to any prior art, scope or rejection, appropriate claims have been amended, added or deleted (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, the amendments to the claims are unrelated to any prior art or scope adjustment, and are simply clarified claims in which Applicant is presently interested. At entry of this paper, Claims 1-18 remain pending in the application for consideration and examination.

REJECTIONS UNDER 35 USC §102

The 35 USC §102 rejection of Claims 1-2 as being anticipated by Belehraddek *et al.* (US 6,198,257), and the §102 rejection of 1-18 as being anticipated by Miller *et al.* (US 5,465,011), are respectfully traversed.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following. The cited art does not adequately support a §102 anticipation-type

rejection because it does not, at minimum, disclose (or suggest) the following limitations of Applicant's clarified claims.

As one important feature, Applicant's disclosed and claimed invention has two (2) boosting arrangements which operate in series whenever Applicant's uninterruptible power supply is operating using DC power from an energy accumulation means during occurrence of an AC failure. More specifically, referencing Applicant's FIG. 1, upon an AC failure, Applicant's rechargeable battery 9 supplies DC power which is boosted a first time by Applicant's charge/discharge circuit 8, and which is then boosted a second time by Applicant's power factor correction (PFC) converter 6, before arriving at Applicant's converter 7. That is, note that both such boosting components are in the series circuit running from the battery 9 to the converter 7.

Another important feature is that applicant's charge/discharge circuit 8, for example, serves double duty in that, in addition to boosting power from the rechargeable battery 9 (during AC failure), the circuit 8 also operates in a second direction to lower inputted electric power for charging the rechargeable battery 9. In terms of relevant claim language, Applicant's independent Claim 1 (and claims dependent therefrom) explicitly recites, "**wherein first boost means** of the two serially connected boost means, which is nearer to the energy accumulation means, raises the DC electric power from said energy accumulation means to supply second boost means of the two serially connected boost means when supply of electric power is interrupted, **and lowers inputted electric power for charging the electric accumulation means during an ordinary operation.**"

Applicant's independent Claim 8 (and claims dependent therefrom) recites such feature in a differing way, *i.e.*, recites, "**wherein said boost means** boosts the DC power in said energy accumulation means and feeding the boost power to an input side of said boost converter to supply said boost converter when supply of electric power is interrupted, **and lowers inputted electric power for charging the electric accumulation means during an ordinary operation.**" Independent Claim 12 (and claims dependent therefrom) recites, "wherein a portion of an output side of said output converter is coupled to a high voltage side of said boost means, **said boost means is a bi-directional DC/DC converter capable of a back mode operation in a reverse direction, said boost means lowers inputted electric power for charging said energy accumulation means while the AC power source is normal**, and while the AC power source fails, said boost means boosts the DC power in said energy accumulation means and supplies the boost power to an input side of said boost converter."

Neither of the applied references discloses (or suggests) a boosting circuit also operates in a second direction to lower inputted electric power for charging an electric accumulation means (e.g., battery). More particularly, Belehraddek et al.'s first/second boost stages 16/18 appear not to charge an electric accumulation means. Miller et al. has a separate battery 16 and battery charger 70 arrangement.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

None of the references disclose the feature of the embodiments of the present invention that the boost means (8) connected to the secondary battery (9) is also provided with the voltage lowering means for charging the secondary battery.

Belehraddek discloses the constitution that the boost converters are connected by two stages to raise the voltage. Further, Belehraddek discloses that the battery 316 is used. However, Belehraddek neither discloses nor suggests that although the boost converter 16 of the first stage is provided with the function for raising the electric power when the supply of the electric power is interrupted, the boost converter is provided with the function for lowering the electric power supplied from the external- and charging the battery 316, during the ordinary operation.

On the other hand, in the uninterruptible power system (UPS) of Applicant's amended claims of the present invention, the first boost means which is nearer to the energy accumulation means of the two boost means raises the DC electric power from the energy accumulation means to supply for the second boost means when the supply of the electric power is interrupted, and lowers the inputted electric power to charge the energy accumulation mean during the ordinary operation. Accordingly, the number of the cells connected serially for the battery can be decreased to reduce the volume of the UPS, as compared with multi-outputs with the backup function of the prior art.

Miller discloses a constitution that the boost converters are connected by the two stages to raise the voltage. Further, Miller discloses that the battery 16 is used. However, Miller neither discloses nor suggests that although the power factor correct 20 of the first stage is provided with the function for raising the electric power when the supply of the electric power is interrupted, the power factor correct is provided

with the function for lowering the electric power supplied from the external and charging the battery 16, during the ordinary operation.

On the other hand, in the uninterruptible power system (UPS) of Applicant's amended claims of the present invention, the first boost means which is nearer to the energy accumulation means of the two boost means raises the DC electric power from the energy accumulation means to supply for the second boost means when the supply of the electric power is interrupted, and lowers the inputted electric power to charge the energy accumulation mean during the ordinary operation. Accordingly, the number of the cells connected serially for the battery can be decreased to reduce the volume of the UPS, as compared with multi-outputs with the backup function of the prior art.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a §102 anticipation-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §102 rejections, and express written allowance of all of the rejected claims, are respectfully requested.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer of any scope or subject matter. Further, Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, *i.e.*, Applicant continues (indefinitely) to

maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

EXAMINER INVITED TO TELEPHONE

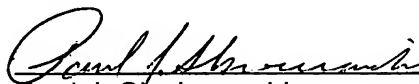
The Examiner is invited to telephone the undersigned at the local D.C. area number 703-312-6600, to discuss an Examiner's Amendment or other suggested action for accelerating prosecution and moving the present application to allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To whatever other extent is actually necessary, Applicant respectfully petitions the Commissioner for an extension of time under 37 CFR §1.136. Please charge any actual fee deficiency to ATS&K Deposit Account No. 01-2135 (Case No. 500.42875X00).

Respectfully submitted,



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